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INTRODUCTION.

This REVIEW treats generally the meteorological conditions of the United States and Canada for May, 1887, and is based upon reports of regular and voluntary observers of both countries. Descriptions of the storms which occurred over the north Atlantic Ocean during the month are also given, and their approximate paths shown on chart i, on which also appears the distribution of icebergs and field ice reported. In tracing the centres of the paths of these storms, data from the reports of two hundred and thirty-three vessels have been used. The weather in the trans-Atlantic routes was seasonable during a greater portion of the month, the severe gales and low barometric pressure which prevailed over mid-ocean from the 22d to the 25th, inclusive, being a noticeable and unusual feature. The position and movement of the Arctic ice-fields corresponded closely with the average for corresponding month of previous years. Dense fog prevailed during a considerable portion of the month in the trans-Atlantic routes west of the fortieth meridian.

On chart i for this month are traced over the United States and Canada the paths of ten areas of low pressure; the average number for May during the past thirteen years is 8.6. The most severe storm of the month passed over the upper Mississippi valley and upper lake region on the 1st and 2d; it was accompanied by heavy thunder-storms and severe south and southwest gales, and followed on the 3d by rapidly falling temperature. The depression that passed northward over Louisiana and Arkansas on the 3d and 4th was accompanied and preceded in those states, and over the adjacent regions, by very heavy rainfalls, a number of stations reporting from two to four inches in forty-eight hours; these rains were of great benefit to this region, in which there had been prolonged drought.

The temperature of the month has been decidedly above the normal in all parts of the country, except along the Atlantic coast and in middle California. The greatest excess over the normal occurred in the Lake region and upper Mississippi valley, where it amounted to from 4° to 8°.

The most important feature in connection with the precipitation of the month has been the marked deficiency in New England, the Lake region, upper Mississippi and Missouri valleys, and east Gulf states, over which districts the deficiencies amounted to from 30 per cent. to 75 per cent. of the average.

In the preparation of this REVIEW the following data, received up to June 20, 1887, have been used, viz., the regular tri-daily weather-charts, containing data of simultaneous observations taken at one hundred and thirty-three Signal Service stations and twenty-three Canadian stations, as telegraphed to this office; one hundred and seventy-one monthly journals and one hundred and sixty-six monthly means from the former and twenty-three monthly means from the latter; two hundred and seventy-one monthly registers from voluntary observers; fifty-nine monthly registers from United States Army post surgeons; marine records; international simultaneous observations; marine reports through the co-operation of the "New York Herald Weather Service;" abstracts of ships' logs furnished by the publishers of "The New York Maritime Register;" monthly weather reports from the local weather services of Alabama, Colorado, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Mississippi, Missouri, New England, New Jersey, North Carolina, Ohio, South Carolina, and Tennessee; and of the Central Pacific Railway Company; trustworthy newspaper extracts, and special reports.

ATMOSPHERIC PRESSURE (expressed in inches and hundredths).

The distribution of mean pressure for May, 1887, determined from the tri-daily telegraphic observations of the Signal Service, is shown by isobarometric lines on chart ii.

The barometric means for May, 1887, were least in the Rocky Mountain regions and in British America to the north of Montana and Dakota, over which territory they ranged, generally, from 29.8 to 29.9, although means both above and below these figures are reported from scattering stations. At Q'Appelle, Northwest Territory, and Deadwood, Dak., the means were 29.79 and 29.98, respectively, that for Deadwood being about .05 higher than at any station in the region named. To the eastward and westward of the Rocky Mountain regions the mean pressure increases to 30.05 on both the Atlantic and Pacific coasts; while the isobar for 30.05 is traced along the Atlantic coast from Nova Scotia to Virginia, that for 30.05 on the Pacific coast is confined to the limits of Oregon. Over the region from the Great Lakes southward to the Gulf coast the barometric means ranged from 29.95 to 30.00. The highest mean reported during the month is 30.09, at Wood's Holl, Mass., the least being 29.79, at Q'Appelle, as stated above.

The departures from the normal pressure for the various stations are given in the tables of miscellaneous meteorological data; they are also graphically exhibited on chart iv by lines connecting stations of normal or equal abnormal values. A comparison of the mean pressure for May, 1887, with the normal, shows, as will be seen from chart iv, that over the greater part of the country the pressure has differed but slightly from the normal for May. In the middle Rocky Mountain districts, upper Missouri valley, and along the northern border of the United States from Lake Superior to the Pacific coast, the pressure has been below the normal; it has also been slightly below the normal over an area embracing the greater part of the territory south of the Ohio River and east of the Mississippi. In all other districts the pressure has been normal or above. The most marked excess, 0.1, is shown over Manitoba and the Red River Valley of the North; while the greatest deficiency, also 0.1, occurs in the Maritime Provinces of Canada.

The mean pressure for May, 1887, as compared with that for the preceding month, shows a decrease, generally ranging from .01 to .08, in the extreme northwest, the plateau, and